

WHAT IS CLAIMED IS:

1. In an impact absorbing type steering column apparatus for an automotive vehicle, capable of adjusting a steering position and, when a secondary collision happens, absorbing impact energy thereof by moving a steering column supported through a bracket on a car body towards the front of the vehicle,

an improvement characterized in that said bracket includes a restricting portion for restricting a steering position adjusting range of said steering column, and

said restricting portion allows, upon the secondary collision, said steering column to move beyond the steering position adjusting range.

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2. In an impact absorbing type steering column apparatus for an automotive vehicle, capable of adjusting a steering position and, when a secondary collision happens, absorbing impact energy thereof by moving a steering column supported through a bracket on a car body towards the front of the vehicle,

an improvement characterized in that said bracket includes a steering column position adjusting groove, through which a fastening member of said steering column is inserted and of which one end is opened, and a restricting portion for restricting a steering position adjusting range of said steering

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column, and

said restricting portion allows, upon the secondary collision, said steering column to move beyond the steering position adjusting range.

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3. An impact absorbing type steering column apparatus for an automotive vehicle according to claim 2, wherein said groove serves for adjusting a tilt position of said steering column, and a lower  
10 bracket supporting said steering column through a hinge mechanism in the front of the vehicle and supported on the car body, is provided on a front-of-the vehicle side of said bracket,

said lower bracket includes a cut-away portion  
15 through which a pivot of said hinge mechanism is inserted and of which a front-of-the-vehicle side is opened, and

said pivot comes off said open end of said cut-away portion upon an axis-directional input of said  
20 steering column when the secondary collision happens, and said steering column is released from said lower bracket.

4. An impact absorbing type steering column  
25 apparatus for an automotive vehicle according to claim 2 or 3, wherein a protrusion for regulating a movement of said fastening member is provided as said

restricting portion within said adjusting groove.

5           5. An impact absorbing type steering column  
apparatus for an automotive vehicle according to  
claim 4, wherein said protrusion is constructed of a  
plurality of protrusions formed in alignment in their  
directions towards the front of the vehicle.

10           6. An impact absorbing type steering column  
apparatus for an automotive vehicle according to  
claim 4 or 5, wherein said protrusion includes an  
abutting surface on the side facing said fastening  
member.

15           7. An impact absorbing type steering column  
apparatus for an automotive vehicle according to  
claim 3, wherein said restricting portion of said  
bracket extends substantially in front-and-rear  
directions of the vehicle in a way that leaves said  
20   open end, and is formed to delimit substantially a  
lower portion of said position adjusting groove, and  
said restricting member includes a bend allowing  
portion for allowing said fastening member of said  
steering column to move towards the front of the  
25   vehicle through said open end.

8. An impact absorbing type steering column

apparatus for an automotive vehicle according to  
claim 3, wherein said restricting portion of said car  
body sided bracket extends substantially in vertical  
directions in a way that leaves said open end, and is  
5 formed to delimit substantially a side position of  
said adjusting groove, and

said restricting portion includes a bend  
allowing portion for allowing said fastening member  
of said steering column to move towards the front of  
10 the vehicle through said open end.

9. An impact absorbing type steering column  
apparatus for an automotive vehicle according to  
claim 2 or 3, further comprising a column support  
15 member extending so as to be curved under said  
steering column,

wherein said column support member delimits  
substantially the lower portion of the steering  
position adjusting range, and prevents said steering  
20 column from falling down.

10. In an impact absorbing type steering column  
apparatus for an automotive vehicle, capable of  
adjusting a steering position and, when a secondary  
25 collision happens, absorbing impact energy thereof by  
moving a steering column supported through a bracket  
on a car body towards the front of the vehicle,

an improvement characterized in that there is provided a restricting member including a first restricting portion and a second restricting portion, said restricting member allows, within said first  
5 restricting portion, said steering column to move for a positional adjustment, then deforms when said steering column moves, upon a secondary collision, beyond a first predetermined range restricted by said first restricting portion, and restricts the movement  
10 of said steering column within a second predetermined range by use of said second restricting portion.

11. An impact absorbing type steering column apparatus for an automotive vehicle according to  
15 claim 10, wherein said bracket is constructed of an upper bracket and a lower bracket, a bolt is inserted through a hole of said upper bracket, and said steering column is supported by said upper bracket,

said restricting member is formed integrally  
20 with said car body sided upper bracket,

said first restricting portion is formed with said hole, and

when said steering column moves through only the first predetermined range upon the secondary  
25 collision, said bolt causes said restricting member to deform and enters said second restricting portion provided adjacent to said first restricting portion.

12. An impact absorbing type steering column  
apparatus for an automotive vehicle according to  
claim 11, wherein when said bolt enters said second  
5 restricting portion, said restricting member makes  
its flexural deformation so as to extend in a moving  
direction of said bolt.

13. An impact absorbing type steering column  
10 apparatus for an automotive vehicle according to  
claim 11, wherein said second restricting portion is  
previously formed as an elongate hole suitable for  
guiding said bolt in its moving direction when said  
bolt has entered said second restricting portion.

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14. An impact absorbing type steering column  
apparatus for an automotive vehicle according to  
claim 11, wherein said hole of said upper bracket is  
a groove for a tilt adjustment, said bolt is a  
20 fastening bolt for the tilt adjustment, and said  
lower bracket pivotally supports said steering column.

15. An impact absorbing type steering column  
apparatus for an automotive vehicle according to  
25 claim 11, wherein a bolt is inserted through a hole  
of said lower bracket, and said steering column is  
supported by said lower bracket,

said restricting member is formed integrally  
with said car body sided lower bracket,

said first restricting portion is formed with  
said hole, and

5           when the secondary collision happens, impact  
energy is absorbed in a way that causes a flexural  
deformation of said restricting member while moving  
said steering column towards the front of the vehicle,  
and

10           when said steering column moves through only the  
first predetermined range, said bolt causes said  
restricting member to deform and enters said second  
restricting portion provided adjacent to said first  
restricting portion.

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16. An impact absorbing type steering column  
apparatus for an automotive vehicle according to  
claim 15, wherein when said bolt enters said second  
restricting portion, said restricting member makes  
20   its flexural deformation so as to extend in a moving  
direction of said bolt.

17. An impact absorbing type steering column  
apparatus for an automotive vehicle according to  
25   claim 15, wherein said second restricting portion is  
previously formed as an elongate hole suitable for  
guiding said bolt in its moving direction when said

bolt has entered said second restricting portion.

18. An impact absorbing type steering column  
apparatus for an automotive vehicle according to  
5 claim 15, wherein said hole of said car body sided  
lower bracket is a support hole for the tilt  
adjustment, and said bolt is a tilt adjusting hinge  
pin for determining a tilt center when inserted into  
said support hole.